

SHORTIA

NEWSLETTER OF THE

WESTERN CAROLINA BOTANICAL CLUB



Shortia galacifolia

Oconee Bells

Spring 2021

Board of Directors

President	Gayle Mercurio
Vice-President	Joe Standaert
Secretary	Susan Sunflower
Treasurer	Penny Longhurst
Members at Large	Charlie Brice & Cindy Carpenter

MEMBER NEWS

Field Trip Cancellations: Occasionally, field trips must be canceled or changed either for weather conditions or other reasons such as road closings. Such changes are sent out by email to all members by 7 AM the day of the field trip. If you do not have email access, please call the leader, co-leader, or recorder (whose phone numbers are listed on the schedule) to be sure that the walk is going to go as planned. Indoor programs are canceled when Henderson County Schools are closed (see <http://www.hendersoncountypublicschoolsnc.org>) but NOT necessarily canceled because of the delayed opening.

For any change of address, email or telephone number, please send an email to wcbotanicalclub@gmail.com.

Our webpage is located at <http://wcbotanicalclub.org>

NOTE: All club activities are canceled until July 2021 due to Covid-19 concerns. All full year (\$15) dues for 2020 will be applied to 2021, so memberships will be automatically renewed for 2021 (assuming there are activities in 2021).

As a reminder, here is the information that all of you should have received concerning the plan for 2021.

The Scheduling Team discussed the virus, the requirement to wear masks, social distancing, and the vaccine. The club's plans for the first six months of 2021 are as follows:

1. Cancel all official activities/walks for the period January 1 through June 30, 2021, and evaluate in May.
2. Send members the sheet with walks for the past 5 years, and the proposed Spring schedule, as was done in 2020.
3. Post the current checklists and members can print what they need.

President's Message

Gayle Mercurio

Spring Is Here!

What a glorious time of year. We have survived a year with the COVID pandemic. The winter was cold and the wind was horrendous at times. But now our clocks are reset, it stays light outside longer and the sun is shining brightly.

We've been hiking Twin Bridges for a couple of months looking for a speck of green. Each hike made us a little more anxious to find something. At first it was a winter forest appearing to be at rest. There were no flowers, leafless trees and not much to see. We studied the bark on the trees and dead leaves surrounding them. On later hikes we saw just tiny hints of something pushing up the dead leaves. Soon after that we were excited to see some small green stems and a few green leaves appear. Finally, the most beautiful ephemeral flowers unfolded lifting our spirits and making us smile. How welcoming they were to yearning souls.

The last time we went to Twin Bridges we saw great numbers of blooming plants. The floor of the forest was covered with bountiful color. It graciously presented a stunning show. The one surprise we had not expected was the precious columbine, *Aquilegia canadensis*, in bloom, never noticed in previous years, not far from the boulders at the entrance from the road.

As we finished our hike and gathered at our cars across the road, we stood looking down at the roaring, running creek below. Its furious speed over rocks was so loud you had to raise your voice to be heard over the gushing, splashing, tremendous amount of water racing down the hill. On the other side of the creek directly in front of us there was an enormous cliff with trickling water working its way down from the top to join the rushing water at the bottom. Far up on the cliff, tucked in a tiny ridge, we saw a flower in full bloom. I grabbed my binoculars to confirm our identification. Yes, it was a columbine, alone and gloriously blooming red and yellow.

Such an extraordinary way to end a spectacular day. Spring is here. What a total joy to know and learn and love wildflowers and nature.



A small columbine blooming the following day in my garden at home.

Plants we Love to Hate - *Smilax*

by Penny Longhurst

As someone who has done an awful lot of bushwhacking in the past year, I have a definite hate-hate relationship with *Smilax*. In some of the places I've gone, its thickets resemble those bead curtains you used to see hanging down in doorways. Other times, the tangling vines are worse to clamber through than Dog Hobble. And, of course, *Smilax* is covered with nasty PRICKLES! I learned to wear leather work gloves for these expeditions but I need to get some leather chaps to prevent scratched and bleeding legs!

The genus name, *Smilax*, means “bindweed” or “clasping” referring to the habit of the *Smilax* vine species to climb by extending tendrils around supporting plants. A common name for the genus is “Greenbrier”. According to Weakley (2020), 21 different species and varieties of *Smilax* are found in the Southeastern United States. They are divided into 2 groups based on plant form and whether they bear prickles. Seven have been recorded in our database. Biltmore Carrion Flower (*Smilax biltmoreana*) and Carrion Flower (*Smilax herbacea*) are kindly herbaceous perennials that lack prickles. The remaining species are vines with woody stems and, as we well know, have prickles with varying degrees of nastiness. They are Saw Greenbrier (*Smilax bona-nox*), Whiteleaf Greenbrier (*Smilax glauca*), Laurel Greenbrier (*Smilax laurifolia*), Catbrier (*Smilax rotundifolia*), and Bristly Greenbrier (*Smilax tamnoides*, formerly *Smilax hispida*). The genus *Smilax* and the species *S. herbacea*, *S. bona-nox*, *S. laurifolia*, and *S. rotundifolia* were named by Linnaeus. The flowers of *Smilax* species are dioecious; male and female flowers are borne on separate plants. The species we see most commonly are described below.



Biltmore Carrion Flower (*Smilax biltmoreana*)



Carrion Flower (*Smilax herbacea*) Male Flowers

The leaves of Biltmore Carrion Flower (*S. biltmoreana*) are often confused with those of Wild Yam (*Dioscorea villosa*), but *S. biltmoreana* has fewer leaves with only 3-5 central veins that join at the leaf apex. It is a short plant, rarely growing more than 1 or 2 feet tall. The specific epithet refers to the Biltmore estate in Asheville, NC.

Carrion Flower (*S. herbacea*) can grow an astounding 12 feet in a year, magically supporting itself in an upright position until it can attach to supporting shrubs with its curling tendrils. The specific epithet means “herbaceous, not woody”. The common name “Carrion Flower” refers to the putrid scent of the flowers which attracts pollinating flies. Fertilized female plants develop a ball of green berries that turn black/blue as they ripen and are a food source for many animals, including black bears.



Catbrier (*Smilax rotundifolia*) Fruit



Bristly Greenbrier (*Smilax tamnoides*)

Catbrier (*S. rotundifolia*) is a good plant to avoid, although sadly it's very common in the areas where I hike! Its stems are green, rigid, 4-angled with large, stout prickles, and attach to other plants with tendrils. The derivation of the common name is fairly obvious. Those prickles can really hurt and cause nasty bleeding scratches. The specific epithet means “round leaf”, although the leaves are more often ovate. The leaves are green on both upper and lower surfaces. The flowers are inconspicuous and produce berries that turn black later in the year.

The appropriately named Bristly Greenbrier (*S. tamnoides*) is a less commonly seen vine. The stem is much slimmer than that of *S. rotundifolia* and covered with small, slender, sharp, brown/black prickles that can still cause damage. The specific epithets *tamnoides* and *hispida* mean “bristly”.

The remaining *Smilax* species are much less frequently found; we have only one picture of each on our website, so we need to do better. *S. bona-nox* has been seen at Glassy Mountain. The stem is 4-angled and zigzags. The leaves have a distinctive shape, principally triangular. Hopefully we can find it next time we visit. *S. glauca* has been seen at Ashmore Preserve. The leaves are light colored underneath and should be easy to identify. *S. laurifolia* has been seen at Eva Chandler Heritage Preserve. With its slim leaves it also should be easy to identify. We just need to watch out for those prickles! By the way, several *Smilax* species are edible when young and reputed to taste like young asparagus.

Extracts of the roots of some non-native *Smilax* species are included in a herbal medication called Sarsaparilla and have been used to treat gout, syphilis, leprosy, psoriasis, and more. However clinical studies to evaluate their efficacy have not been done.

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Lycopodiums – an Ancient Species

by Vince Mercurio

It was a beautiful February winter day when Lucy, Rosemarie, Gayle and I took a walk through Dupont Forest to see what spring ephemerals the winter had to offer up. It was a little chilly in the shade yet not so cold in the bright sunshine with patches of snow scattered about from the last snowfall. We saw some early shoots poking up through the leaf litter and a few flower buds but most impressive were the patches of lycopodium. Here, in the dead of winter, contrasted against leafless towering trees and the bare stems of last year's bushes were vibrant, robust patches of lycopodium. I wondered how a plant without any bark for protection or a ton of leaves for generating enough energy to get it through the winter, could not only survive but thrive in the dead of winter. How a plant that grows mostly in the shade at the bottom of the forest floor and whose biggest opportunity for getting sunlight is during the winter when the light from the sun is at its weakest angle can thrive. Thus was born my next pandemic stay at home research project.



A wintertime patch of Lycopodium

I didn't have to look far to find my answer. It was in a book that has been sitting idly on our bookshelf since I read it five years ago. The book, *The Trees In My Forest* by Bernd Heinrich, is a collection of essays he wrote on various topics centered on a wooded 300 acre patch of land he owns in Maine. Heinrich is a biology professor at the University of Vermont and is the author of many books dealing with natural history. His answer has to do with growth strategies that are embedded in each plant's DNA. In nature, plants can only take in so much energy depending on where and how they grow. How they spend that energy to grow, survive and reproduce is based around their growth strategies. The strategy we're perhaps most familiar with is that of the big, towering woodland trees. Essentially, their strategy is simple - grow taller than all other trees near them and put out leaves in a wide swath to collect as much sunlight energy as possible. When this strategy is successful, the results are magnificent, but more often than not, this is a losing strategy. Typically, only one out of thousands or perhaps millions manage to achieve their full growth. This simple strategy of growing high and wide requires a massive and costly support structure consisting of a sturdy trunk and a network of limbs branching out in all directions to support the thousands of leaves for collecting the energy required to fuel its growth. Another adverse aspect of reaching high and wide is icing and snow and winds that can topple trees unless they were able to invest the resources in building a substantially massive support structure. As a precaution against these dangers, trees shed their leaves in the fall and once again have a massive energy debt in the spring for growing new leaves.

Lycopodiums are an ancient species dating back more than four hundred million years which is about eighty million years earlier than the Blue Ridge mountains were formed. They have survived all these years by adopting a growth strategy of minimizing energy

Lycopodium fast fact: Lycopodiums and Horsetails evolved some 400 million years ago as one of the first groups of vascular plants. Around 300 million years ago, they reached heights of 100 feet.

requirements by not competing in an arms war of bigger is better. By not competing, they don't have to allocate huge amounts of energy for building wooden scaffolding to reach for the sky or renew their solar collecting leaves each year. It's estimated that trees spend 99% of their energy for building their wood scaffolding and

growing a new crop of leaves each year. This leaves only 1% for reproducing and propagating their species. A razor thin margin that, if not met, can easily put a tree in an energy deficit making it more vulnerable to disease, inclement weather and death.



Lycopodiums operate on a very low energy budget and supposedly grow best in mixed evergreen deciduous woods. By growing close to evergreen trees, they do not become buried in leaves that deciduous trees shed. Yet the nearby deciduous trees, with their leaves shed, allow a small yet sufficient amount of sunlight to reach them for satisfying their scant energy needs. So on our next walks, an additional lycopodium challenge will be not so much of identifying the species but instead to observe the habitat to see, if in fact, lycopodiums grow best in mixed evergreen/deciduous habitats.

*A patch of Lycopodium digitatum in
a mixed pine/deciduous forest*

What's in a Name - *Rugelii*

By Penny Longhurst

Everyone loves trilliums. I've written about Catesby's Trillium¹ and Vasey's Trillium² in past issues of Shortia, but I think that one of my favorites is "Rugel's Trillium" (Southern Nodding Trillium, *Trillium rugelii*). Susan P. and I spent many hours crawling around Coontree trail documenting all the different variations of *T. rugelii* growing there, and I've spent similar amounts of time doing the same thing up on Big Ridge. Many trillium are considered promiscuous, hybridizing across species, but in this area, *T. rugelii* is SUPER-promiscuous, apparently hybridizing with neighboring *T. vaseyi* with ease and producing plants with fascinating blooms of all shapes and colors. *Trillium rugelii* is named after Ferdinand Rugel, a German-born plant collector who is considered one of Tennessee's botanical pioneers. Rugel's Plantain (*Rugelia nudicaulis*), which Joe calls the "Worlds Ugliest Rare Flower", is also named after him.



Southern Nodding Trillium (*Trillium rugelii*)
Typical form



Rugel's Plantain (*Rugelia nudicaulis*)
Photograph by Joe Standaert

Ferdinand Ignatius Xavier Rugel was born in 1806 in Ravensburg, Germany, about 110 miles west of Munich. Around 1827 he moved to Bern, Switzerland, and worked as an apprentice pharmacist. He became interested in botany, collecting plants in southern Switzerland, France, and the Pyrenees. Rugel was mentored by the British botanist Robert James Shuttleworth, who lived in Bern and after whom *Hexastylis shuttleworthii* is named. In 1840, Rugel travelled to the United States to collect plants and shells in Georgia and the Carolinas with strict instructions to send them to Shuttleworth only. Nothing he collected was to be given or sold to American botanists. Thus, most of the American plants collected by Rugel were written up and attributed to Shuttleworth, causing considerable ill-feeling among the American botanists, who hastened to beat him to publication.

In 1840 and 1841, Rugel worked as a pharmacist and collected plants in Portsmouth, VA. Then, in the summer of 1841 he travelled west, collecting on Black Mountain and in Rutherford County, NC, and in 1842, settled in Dandridge, TN, where he worked as a pharmacist and physician. This became his headquarters for plant collecting. Although some biographies state he married in 1842 and others in 1845, Wayne Roberts, Director of

the Jefferson County Archives, kindly checked for me and found that Rugel married Laura Bell on January 12th, 1843. Corgan reports that she subsequently became the mother of “12 little Rugels”!³

In April 1842, Samuel Botsford Buckley (after whom *Hypericum buckleyii* is named) was passing through the area and stopped by to visit Rugel. He described him as “a real German student, careless of his appearance, very industrious, and the best prepared and equipped for collecting and preserving specimens of any person I ever met.”⁴ However he commented that Rugel’s knowledge of American plants was “very low”, which was maybe not surprising since he had been collecting in the area for only a few months. On April 24, 1842 they set off together to botanize in the Smoky mountains, travelling to Alum Cave Bluffs and then into the higher mountains. An oft-repeated incident from the trip describes how Rugel’s horse, Fox, ran off with him bouncing around on board!⁴ Despite this excitement, Buckley reported that they returned safely from their trip loaded with specimens and well pleased with the result of their excursion. In a later report, Buckley described how he and Rugel had found Rugel’s Plantain near Newfound Gap on Mount Mingus, during that trip.⁵ However, on September 29th, 1842, Moses Ashley Curtis wrote to Asa Gray that “Buckley was just here and tells me he was with Rugel a while, & that he is a mean man; also, that he has fallen out with Torr. & Gray, & that he has sent & is sending his plants to Europe. The European botanists have written him not to let the Americans have his plants. I am determined therefore to work up the few plants that I have into a paper for the Jan. [...] of Silliman’s Journal [the American Journal of Science & Arts] so as to anticipate, as far as I can, any European Botanists. I wish you would help me in this, if you have time. Buckley’s plants had better be worked over also.”⁶

Rugel continued to collect. In addition to his Tennessee excursions, he travelled through Alabama and Florida in 1843, sending about 1,000 species of plants to Shuttleworth. Subsequent trips took him back to Florida and also to Cuba. In 1849 he severed ties with Shuttleworth, moved to Knoxville, and worked compounding drugs at a manufacturing company. He mostly gave up plant collecting, and after the Civil War moved to a farm in Jefferson County, East Tennessee, where he died in 1879. After Shuttleworth’s death in 1877, his herbarium, containing thousands of specimens collected by Rugel, was purchased by the British Museum. An exchange was subsequently made with the United States National Museum which ended up with over 1,000 of Rugel’s specimens.⁷ A similar exchange was made with the UNC herbarium which obtained 150 of Rugel’s plants, including a specimen of *Rugelia nudicaulis* collected by Rugel in the “Smokey Mts., Tennessee” in August 1842.⁸ Rugel’s personal herbarium and collection of shells was purchased by the Smith, Kline, & French company and donated to the Philadelphia College of Pharmacy and Sciences.⁷ I was unable to find out if it is still there.

Weakley (2020)⁹ lists 15 plants associated with Rugel; six of these share the species name *rugelii*. The genus *Rugelia* (which contains only *Rugelia nudicaulis*) is also named after Rugel. Those listed in our database are Broad-leaved Plantain (*Plantago rugelii*), Southern Nodding Trillium (*Trillium rugelii*), and Rugel’s Plantain (*Rugelia nudicaulis*). The specific epithet, *nudicaulis*, means having leafless or naked stems. The club found *R. nudicaulis*, a rare species endemic to the high mountains of the Smokies, on our field trip to Heintooga Ridge Road. The mollusks Deep-tooth Shagreen snail (*Inflectarius rugeli*) and Wrinkled Button (*Mesomphix rugeli*) are also named after Rugel.

But, to get back to Rugel's Trillium... Most *Trillium rugelii* have the typical characteristics of white, ovate, recurved petals, and dark purple stamens. Case and Case point out that plants in mixed colonies with *T. vaseyi* often have petals with colors ranging from bicolored pink and white to dark red with white centers.¹⁰ Hybrids may also be formed with *T. erectum*. The flowers that Susan and I found in our explorations were all nodding, suggesting they were *T. rugelii*. However, the flowers came in all shapes and sizes, ranging from the typical *T. rugelii* form shown in the upper left-hand picture to the typical *T. vaseyi* form in the lower right-hand picture. Some hanky-panky had clearly occurred!



So, if you are out on Lower Coontree at the end of April or the top-most section of Big Ridge in mid-May, make sure you peek at any trillium flowers that are nodding and see if you can find some of these interesting hybrids.

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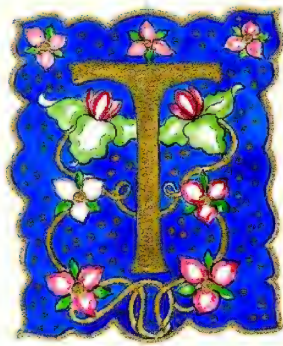
Trillium vaseyi or *Trillium rugelii* or a Syngameon?

By Lucy Prim

Springtime is here, and the Trilliums are blooming! Do you remember an indoor meeting we had back in November 2019 when Penny invited Kathy Matthews to do a presentation for us about Trilliums? How long ago that meeting seems, ages and ages ago, when the world was just about to turn very strange, but we didn't know it yet.

I remember being captivated by Kathy's presentation, and felt particularly intrigued by a word I had never heard before, "syngameon." What does it mean? Is it a newly discovered Tolkien story? No, not a new story, but a new word (to me) to describe a situation that occurs when different species have not evolved to be so different from each other that they can't produce fertile offspring. Two such species are *Trillium vaseyi* and *Trillium rugelii*. They can act like a single species, a species complex, interbreeding and forming intermediate fertile offspring which Kathy called "syngameons".

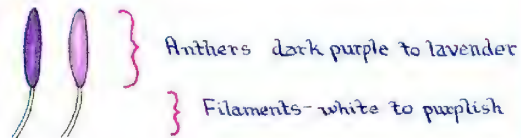
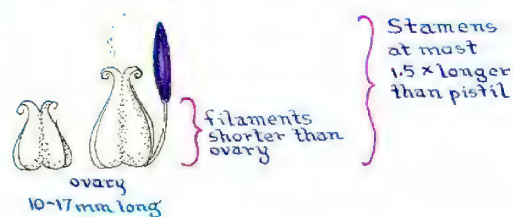
I decided to create another chart! I drew the features of *Trillium vaseyi* and *Trillium rugelii* which help us distinguish them from each other. When we are out on a walk and come upon one of these Trilliums that almost but doesn't quite fit either description, (such as a *Trillium rugelii* with a dark ovary), instead of feeling confused and frustrated, we can recall Kathy's presentation and summon to mind the lovely word she taught us—"syngameon"!



rillium

vaseyi

rugelii

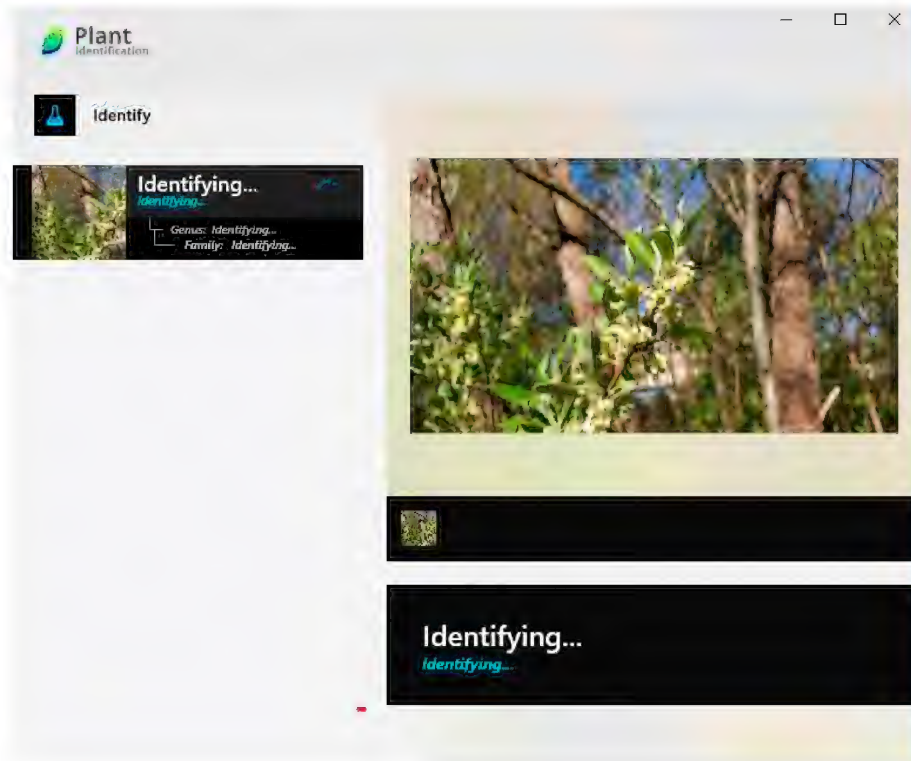


Plant Identification App - Windows

Ken Borgfeldt

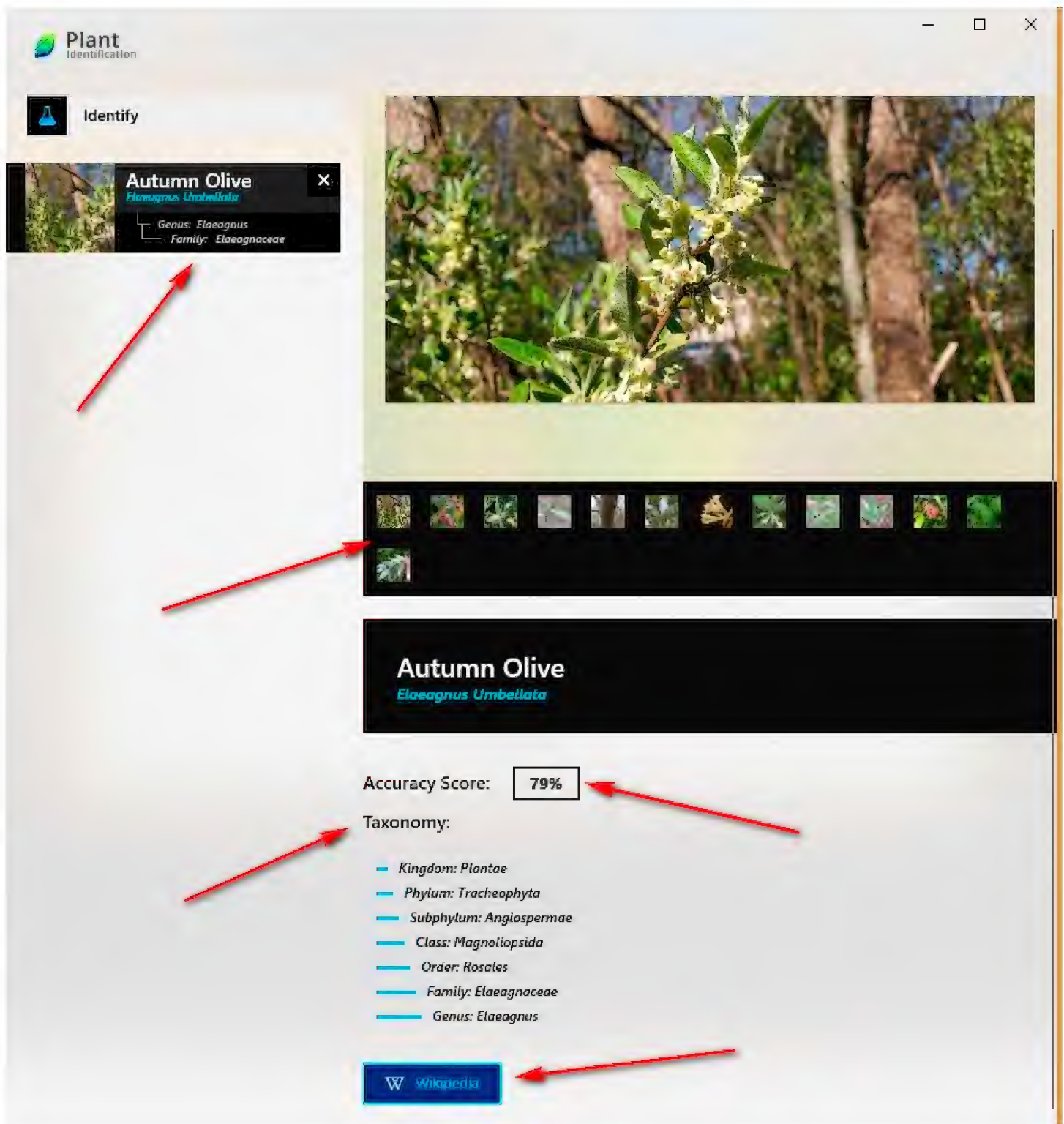
I've previously shared my findings for an Android app to use to identify plants using photos on your phone. Since most of my photos end up on my desktop computer running Windows 10, I thought it expedient to have an ID program there. The Microsoft Store had such an app called, not surprisingly, "Plant Identification". It costs \$4.99.

It has you select a photo of the plant you are interested in and the screen appears as



When it finds a possible guess in its database, it displays the following screen. You'll notice that it provides

- The name of the plant
- Several photos from its collection
- An estimated accuracy score
- The complete Taxonomy
- A link to a Wikipedia article



One small quirk is if it cannot find a guess in the database, which may be because you provided a poor picture, the program shuts down. When I first encountered this, I thought "this is crap", the program crashes. Wrong. Just restart the program and select a better photo. Overall, I like this app especially because I can use it on my desktop computer where I do most of my photo manipulation and file naming.

SHORTIA

A quarterly publication of the Western Carolina Botanical Club
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Editor: Ken Borgfeldt

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The mission of the Club is to identify and study native plants and their habitats and to advocate the protection of biodiversity in our natural world. Membership is open to all. Individual/family memberships are \$15. Send dues to Western Carolina Botanical Club, 351 Cheestoonaya Way, Brevard, NC 28712

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NOTE: All club activities were canceled until July 2021 due to Covid-19 concerns. All full year (\$15) dues for 2020 will be applied to 2021, so memberships will be automatically renewed for 2021.

Starting in July 2021 we will have a weekly walk scheduled through September, 2021. We will have a few COVID safety expectations for you to consider for participation on the walks.

- It is highly recommended that all who attend the walks be fully vaccinated
- Carpool drivers have full discretion over who may ride with them, in relation to vaccination status
- On the walks and gatherings, masks are optional, but social distancing is still recommended, especially if unvaccinated

President's Message

Well, well, well, we have finally started our walks in the woods again! To say this has been a difficult year is an understatement. As nature lovers, hikers and botanists, we have been grateful that we could still get outdoors, although in small groups or "pods" and seeking little-used trails. It was an enjoyable diversion to binge-watching Netflix! I lead the hiking program for the Swannanoa Valley Museum and History Center in Black Mountain and we have also finally gotten back to our group hikes, starting in March. For organized groups, it has been a difficult decision-making process on how to re-start in a safe manner. For the Club, I think we will follow individual responsibility guidelines since we have all been living with COVID issues and learning how to deal with safety concerns. For example, should you want to mask up in groups or on walks, you know best for your own comfort level. As with my Museum hikes, the only real issue is dealing with carpools. Again, we will leave it up to the driver and/or passengers should they feel uncomfortable with the conditions.

Speaking of a year of no organized walks, I would like to give a tremendous "shout out" to Penny Longhurst for keeping up with our weekly Virtual Field Trips. That was a large undertaking and well appreciated by all. I would not say she single-handedly kept the Club going for the past year, but, yes, she almost kept it all going by herself! Of course, also thanks to the folks that supplied Penny with all the photos, but the bulk of the website work and captioning work was done by Penny. Thank you, thank you!

And, as long as appreciation is in order, thanks to our outgoing Board and volunteer members. Thanks to Gayle for serving as our President, Juanita for all her work on the scheduling issues, and at-large board members John Harrison and David Heavner. Also give thanks to all the others that are continuing their work, like Ken as Master Recorder (and emailer!), Susan as Secretary and Penny as Treasurer and Webmeister. And congratulations to our new Vice-President Cindy Carpenter and our new member-at-large, Martha Rollefson.

As a final note, many of our club members have been following and subscribing to Jim's Fowler's photography / botany blog for years. We are sad to note that Jim passed away on June 25th and we will miss him and his excellent work photographing and documenting our special plants here in the Carolinas. Jim passed while photographing *Platanthera psycodes* (Lesser Purple Fringed Orchid) up at Mt. Mitchell - doing what he loved to do best... photograph Orchids.

Here is a link to a tribute to Jim:

<https://jfowlerphotography.com/?p=15747>

Happy botanizing (finally!)

Joe Standaert

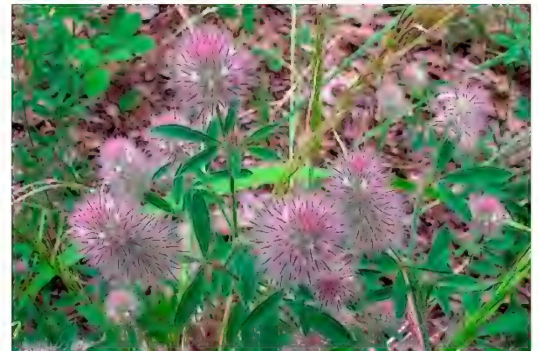
Plants We Love to Hate – Clovers

Penny Longhurst

The word “clover” is derived from the Latin *trifolium* meaning three-parted, referring to the trifoliate shape of clover leaves. Several different plants are commonly referred to as clovers, however many are non-native plants that are considered invasive and widespread across the USA. These include plants in the genera *Kummerowia* (Korean and Japanese Clovers), *Lespedeza* (Bush Clovers), *Marsilea* (Water Clovers), *Medicago* (Alfalfa), *Melilotus* (Sweet Clovers) and *Trifolium* (Clovers). Most were introduced as animal fodder, for nitrogen fixation, or for erosion control, but have quickly become invasive weeds. Other than *Marsilea*, they are all members of the pea or *Fabaceae* family.

The plants we more commonly think of as clovers are in the *Trifolium* genus, which has about 300 members, spread all over the world. The clovers we see around here are mostly non-native but play an important role as animal fodder and in nectar production (think of honey). Unfortunately, most escaped from cultivation and now cover large areas of North America.



Three of the *Trifolium* species in our database are native to the Southeast but all are rare plants. Wild White Clover (*Trifolium carolinianum*), which has tiny white-purple flowers, was seen several years ago by the club on a trip to a CMLC property. A plant of the coastal Carolinas it is now rarely found even there. The other two species have never been recorded by the club. Buffalo Clover (*Trifolium reflexum*) has reddish flowers that sit up above the leaves, with the lower petals a pink-white color. As they age the lower flowers droop or become reflexed, hence the name. It has a North Carolina State Threatened status. Kates Mountain Clover (*Trifolium virginicum*) is so rare in this area that it's not even listed in “Namethatplant” or the “North Carolina Extension Gardener Plant Toolbox”. Dick Smith describes it in “Wildflowers of the Southern Mountains” as a plant found in the northern part of the southern mountains, and even has a photograph (Plate 255). Since our database was originally created from his plant list, this probably explains why it's included. Weakley says it's found in shale barrens from Virginia northwards.



Rabbit Foot Clover (*Trifolium arvense*).
Photograph by Joe Standaert.

Our database includes eight *Trifolium* species which are non-native. Some of them are commonly seen on our field trips. I don't recall seeing Rabbit Foot Clover (*Trifolium arvense*) which is more commonly found in the Piedmont area than up here in the mountains. It has cute fuzzy grayish-pink flowers which look a little like rabbit's feet if you use a lot of imagination or squint. Its leaves are narrow, not rounded like those of red or white clovers. The picture was taken by Joe at Glassy Mountain. Next time we visit I'll have to look for it more carefully.

Hop Clovers are commonly found in the grass along roadsides, for example, on the Blue Ridge Parkway. Large or Palmate Hop Clover (*Trifolium aureum*), Low or Pinnate Hop Clover (*Trifolium campestre*), and Least Hop Clover (*Trifolium dubium*) all have bright yellow flowers but differ in other characteristics as shown below.

Large or Palmate Hop Clover (<i>Trifolium aureum</i>)	Low or Pinnate Hop Clover (<i>Trifolium campestre</i>)	Least Hop Clover (<i>Trifolium dubium</i>)
Leaves palmately trifoliate (all leaflets are sessile)	Leaves pinnately trifoliate (terminal leaflet petiolulate, 1 – 3 mm long); lateral leaflets are sessile	Leaves pinnately trifoliate (terminal leaflet petiolulate, 1 mm long); lateral leaflets are sessile
		
Flowers 5 – 7 mm long	20 - 30 flowers per head, 3.5 - 5 mm long	3 - 15 flowers per head, 2.5 - 3.5 mm long
	Uppermost petal has 5 obvious striations or veins	Uppermost petal is inconspicuously veined
Probably rare in this area	Common	Probably uncommon in this area

Thus, the best characteristics for identification of Hop Clovers are the presence or absence of stalks on the terminal leaflet, the size of the flower head and number of flowers, and the presence or absence of striations on the terminal petal. Looking back at pictures of Hop Clover, this is not as easy as it sounds! We commonly see them on our field trips, but we'll need to stop and look at the yellow clovers much more closely when we next see them to come up with an identification.

Linnaeus thought that Alsike Clover (*Trifolium hybridum*) was a hybrid between Red and White Clovers and named it as such, but it is now known to be a distinct species. It has white-pink flowers, is an erect plant, and lacks the white blotch or "V" on the leaflets that is commonly seen with Red and White Clovers. Next time we see a red clover, we need to check out the leaves.



Crimson or Italian Clover (*Trifolium incarnatum*). Photograph by Ken Borgfeldt.

Crimson or Italian Clover (*Trifolium incarnatum*) should be easy to identify with its beautiful bright red elongated flower heads. Ken's photograph was taken in DuPont State Recreational Forest several years ago. It's probably less common here in the mountains than it is in the Piedmont, but if we see it, we should definitely be able to recognize it.

The plants we see most commonly and that are easiest to identify are Red Clover (*Trifolium pratense*) and White Clover (*Trifolium repens*). *Pratense* means "of a meadow", describing the characteristic location where Red Clover is found.

Repens means “creeping”, describing the characteristic of White Clover to form mats unlike Red Clover which is a more upright plant. Both are extremely common and, although thought of as “weeds”, play important roles in farming. In fact, Red Clover was chosen as the state flower of Vermont due to its use as animal fodder. Red and White Clovers, like other *Trifolium* species, are also important plants for pollinators, producing large amounts of nectar and acting as host plants for many species of butterflies. So, weeds, but maybe with some beneficial qualities?



Red Clover (*Trifolium pratense*)



White Clover (*Trifolium repens*)

Have you ever wondered what kind of plant the shamrock is? A couple of Irish studies over the past century asked people to send samples of what they considered the “true shamrock”. It turns out that the plant that most participants considered to be a shamrock was *Trifolium minus* (we know it as Least Hop Clover, *Trifolium dubium*) closely followed by *Trifolium repens* (White Clover). So, rather than buying shamrocks on Saint Patrick’s Day, we could all go out and pull up some non-native clovers!

Finally, one of the most important questions concerns lucky four-leaf clovers. They result from a genetic mutation of White Clover (*Trifolium repens*), occurring in about 1:10,000 plants. So next time we’re walking in an area that has a load of White Clover, we need to look closer. We might just find a lucky four-leaf shamrock!

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Sedges of the Oklawaha Greenway

Ken Borgfeldt

Over the last 15 months or so I've found a lot of, what I called sedges on the Oklawaha Greenway. As a club we have not spent a great deal of time identifying sedges so I was at the mercy of my plant identification apps to tell me what I had found. They, the apps, found three different genres in the family Cyperaceae; Carex typically called Sedge, Cyperus called flatsedge, and Kyllinga called spikesedge. I have provided photos of plants that I found on the Oklawaha labeled with my app's best guess as to genus and species. I provide them for your pleasure and for your criticism. If I have mislabeled anything, please take a few minutes to provide me with the correct name.





20210712_Globe Flatsedge (*Cyperus echinatus*) Spikes



20210511_Shallow Sedge
(*Carex lurida*) Plant



20210511_Shallow Sedge
(*Carex lurida*)



20200813_Ricefield flatsedge
(*Cyperus iria*)



20200813 Ricefield flatsedge (*Cyperus iria*) Habitat



20200813 Shortleaf spikesedge (*Kyllinga brevifolia*)





20210510 Greater Bladder Sedge (*Carex intumescens*)



20210517 Fringed Sedge (*Carex crinita*)



20210602_Blunt Broom
Sedge (*Carex tribuloides*)



20200828_Strawcolored
Flatsedge (*Cyperus
strigosus*) Plant

Passiflora lutea—a Surprise in the Woods

Lucy Prim

I want to tell you about a surprising experience I had this week. I was walking up Big Glassy Trail at Carl Sandburg's, as I've done hundreds of times, when I noticed something I had never seen before. It was a dainty vine to the side of the path, clambering up a small maple tree. The leaf was so distinctive with its three rounded lobes and shallow sinuses I had no difficulty identifying the plant—*Passiflora lutea*. I went back up the trail the next day, this time to look for flowers. Much to my delight, I did find a flower!



The architecture of this dainty little flower is amazingly complicated. I wanted to get a really good picture of it, showing the different parts in sharp focus. Every day for a week I went back to this spot. In the beginning, the flowers were all above my head and it was very hard to take a picture of something up high like that. My arms got so tired holding the camera up. One little section of the vine is lower down, and each day I went back hoping one of the lower flowers had opened up. Finally, that day came. I was there at 10:30 in the morning, and no flowers were open at all. Disappointed, I walked a little further along the trail, then turned back, and by the time I got back to the vine, three flowers had opened! It was only 15 minutes later! To my delight, one of them was on the lower vine, so I finally got to take some pictures without having to reach up over my head.

A few more surprises are associated with this flower. Searching the internet on Google Scholar I came upon an article describing a solitary bee, *Anthemurgus passiflora*, which only gathers up pollen from this particular Passion Flower. It forms the pollen into a neat little package, seals it up with nectar, lays an egg on top, and then the larva hatches and eats the pollen. (See, "Foraging and Nesting Biology of the Bee *Anthemurgus passiflora*" by John L. Jeff and Jerome G. Rosen, Jr.)

I think most of us know Jim Fowler, the wonderful flower photographer who died at Mt. Mitchell a few weeks ago. I was looking around on the internet for information about *Passiflora lutea* when I came upon a comment Jim had written on somebody's website. He said he had *Passiflora lutea* growing at his house and it was so rampant he had to keep trimming it back!

One more surprise I had concerning this little flower. While trying to take pictures of it beside the trail, several people walked by and thinking they might be delighted to see the flower, I asked, "Would you like to see something really special?" Of course, they said yes, and I showed them the little flower. None of them seemed surprised! A few said dismissively, "Yes, I know that flower. I've seen that in Florida!"



Gender Reveal!

Penny Longhurst

Some of the plants that we see on our walks, such as Hollies, are dioecious. That is, male (staminate) and female (pistillate) flowers are borne on separate plants. However, I don't recall ever trying to identify the gender of these plants on our field trips. Several years ago, we planted a Holly at my house. Every year it is covered with blooms and bees, but never bears a berry. Clearly, we have either a boy or a girl Holly with no nearby suiters. So, this spring I set myself a goal to learn to sex Hollies. That turned out to be quite easy, and I expanded my goal to include other dioecious plants.

Female American Holly (*Ilex opaca*) flowers are generally solitary and have a large green round bump, the ovary, in the center of the petals. In contrast, the male flowers have four yellow pollen-covered stamens, are clustered together in cymes, and are sometimes so numerous that they can be seen from a distance (like my Holly).



American Holly (*Ilex opaca*) - Female bloom and fruit



American Holly (*Ilex opaca*) - Male blooms

I probably shouldn't have been surprised to find that the blooms on Mountain Holly (*Ilex montana*) were almost identical to those of *Ilex opaca*. In the picture below, the stigma is evident sticking out from the center of the ovary on the female plants. I didn't see this on any of the female *Ilex opaca* plants that I observed.



Mountain Holly (*Ilex montana*) - Female blooms



Mountain Holly (*Ilex montana*) - Male blooms

Fairy Wand (*Chamaelirium luteum*) is another dioecious plant. The upper section of the Forest Demonstration Trail at Holmes Educational State Forest is a great place to look for these flowers. The male flowers are much more conspicuous, on a raceme up to 6 inches long and curving. The female flowers are much denser, on a shorter (1 to 2 inches) and broader raceme.



Fairy Wand (*Chamaelirium luteum*) - Female blooms



Fairy Wand (*Chamaelirium luteum*) - Male blooms

We commonly see the male flowers of Wild Yam (*Dioscorea villosa*) on the trails along the Blue Ridge Parkway, but the female flowers are unusual and harder to find. The male flowers spread out along a thin stalk that dangles from the vine. The female flowers also dangle but on a much sturdier stem. Their small petals sit on top of an elongated ovary.



Wild Yam (*Dioscorea villosa*) -Female blooms



Wild Yam (*Dioscorea villosa*) - Male blooms

All Smilax plants are dioecious. Carrion Flower (*Smilax herbacea*) is a plant we see often along the Parkway. Clearly there are lots of female plants around since we see the fruit quite commonly. However, looking back through all the pictures that I took of *Smilax herbacea* flowers over the years I couldn't find any females. Then, last month I finally found a female plant at the beginning of the Frying Pan Gap trail! It reminds me a lot of the Holly flowers, having round ovaries in the center of the petals. Like the Hollies, the pollen-covered stamens are conspicuous on each male *Smilax herbacea* flower



Carrion Flower (*Smilax herbacea*) - Female blooms



Carrion Flower (*Smilax herbacea*) - Male blooms

The dioecious plant we are probably most familiar with is Early Meadow Rue (*Thalictrum dioicum*). The species name says it all! Again, the male flowers are much more conspicuous (and easier to photograph) than the female flowers. The attractive and colorful stamens dangle, allowing pollen to float off in the breeze. The female flowers are much fewer, smaller, and paler in color.



Early Meadow Rue (*Thalictrum dioicum*) - Female blooms



Early Meadow Rue (*Thalictrum dioicum*) - Male blooms

I've been trying to find female flowers of Buffalo Nut (*Pyrularia pubera*) for several years with no luck. According to Coder, the female flowers (7 – 10 in number) are borne on shorter spikes than the male flowers (15 – 32 in number) and have 4 vestigial stamens. The male flowers have 8 short-stalked stamens arranged in 2 whorls, and an obvious characteristic is white hairy tufts at the ends of recurved sepals. Alan Cressler has some excellent pictures illustrating this on his Flickr account that he kindly gave me permission to include in this article. Now I know what I'm supposed to be looking for, finding these flowers will have to be one of next spring's goals!



Buffalo Nut (*Pyrularia pubera*)- Female blooms
Photography by Alan Cressler



Buffalo Nut (*Pyrularia pubera*)- Male blooms
Photography by Alan Cressler

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9 July 2021 Western Carolina Botanical Club Annual Meeting

The 9 July 2021 Western Carolina Botanical Club Annual Meeting was held at Holmes Educational State Forest, at the Picnic Shelter. President Gayle Mercurio called the meeting to order at 11:35. There were 43 members and visitors attending, including all Board Members.

President Gayle Mercurio's Report:

Welcome to all again! This is the 47th meeting of the Western Carolina Botanical Club. The Board held one meeting this year to figure out how to get things going again after the pandemic. This year we have 111 + members, possibly more as some are family memberships.

It was decided, now that restrictions are lifted, to continue as we were, using the same Friday walk procedures as before. We used the same hike schedule we had set up for 2020 with a few small changes. Ken said he had already sent out by email the new 2021 schedule. The first walk will be next Friday, 16 July. In December, before the Christmas party, we will meet to decide what to do about the winter talks at Bullington.

Treasurer Penny Longhurst's Report for July 1, 2020 to June 30, 2021:

Membership:

As of June 30, 2021, we have 111 members, including 1 honorary and 22 new members. The true numbers are higher than that since some of these are family memberships. Of those new members, 12 joined since July 1, 2020. Sixteen of the new members joined since our last club meeting in March 2020 and therefore have not had any opportunity to attend club functions.

Penny noted the newest member, David Lentz, was writing a cheque at that moment!

Financials:

Dues for 2021 were waived for all members who had joined in 2020. We started the fiscal year with \$4,340. Our income was \$252, and expenditures were \$999. We donated \$150 to the Botanical Gardens at Asheville and \$800 to Bullington Gardens. As of June 30, 2021, we have \$3,593 in the bank.

Master Recorder Ken Borgfeldt's Report:

Due to the lack of walks, there was little to report. Please note the change made in 2019 and affirmed at the last Board Meeting: there will be no plant lists handed out at walks. Copies will be included in the weekly walk reminder, for you to print your own.

Bullington Botanical Bunch, Juanita Lambert: Work in the Natural Areas of Bullington Gardens, (July 2020 - June 2021):

We have re-titled this 2021 report to WCBC to reflect the expansion of our activities at Bullington Gardens. Larason Lambert and John Colson have devoted most of their time to the long-neglected Nature Trail and the vicinity of the Azalea Repository, and Steve Mininger helped them when not needed for heavy-duty work in the Native Woodland Garden.

Juanita Lambert's crew of Daudie Colson, Mary Ann Lee, and Marty Mininger worked diligently in the Native Woodland Garden and the open area near the Amphitheater, mostly on maintenance activities of cleaning up fallen branches, weeding, pruning, and watering when needed. New plantings occurred only when new plants became available from donations: Purple Phacelia (*Phacelia bipinnatifida*), Christmas Fern (*Polystichum acrostichoides*), and Wild Hyacinth (*Camassia scilloides*), or from Bullington Gardens' stock: Leatherflower (*Clematis viorna*).

Removal of the large pine tree near the Amphitheater in late 2019, increased light levels substantially, thus dramatically increasing growth of weeds and desirable plants. The Franklin Tree (*Franklinia alatamaha*) bloomed for the first time ever at Bullington Gardens. And to our surprise, a Devil's Walking Stick (*Aralia spinosa*) was discovered this Spring. Even in shady areas, some desirable plants have done too well, most notably the Yellowroot (*Xanthorrhiza simplicissima*), requiring removal as it spreads too far.

Steve's work in the Native Woodland Garden and Amphitheater Area included repairs of some Rhododendron Fence rails, installation of water bars on some trails to prevent erosion and spreading wood chips on trails.

Out along the Nature Trail, Larason and John spent much time cleaning up fallen and dead woody material and trimming back impinging bushes. Late in the Fall, the three men rerouted a fifty-foot section of the trail to make it less impactful with respect to potential erosion. In the Spring, we began adding wood chips to the trail to lessen the impact of heavier use resulting from increased visitation to the Fairy Garden near the end of the trail. This activity will likely be required annually. In order to facilitate delivery of wood chips to points along the half-mile trail, Steve created an expansion of Bullington's utility vehicle bed, tripling its capacity. We are also widening a 600-ft section of the trail to accommodate the vehicle.

Looking to the future, we will likely have to reroute the last 350-ft section of the trail because that current section is now being used in a one-way mode to access the Fairy Garden.

So even though the Bullington Botanical Bunch (as we call ourselves) is currently well-staffed, there always seems to be too much physical and botanical work for us, and we still need to make the Natural Areas of Bullington Gardens more user-friendly from an educational perspective. Furthermore, we need to insure that the physical-botanical infrastructure we have created remains in the future.

Shortia Editor Ken Borgfeldt's Report:

Ken noted the quarterly appearance was due especially to contributions from membership, Lucy Prim, Penny Longhurst and Gayle Mercurio in particular. All were applauded for their on-going work. The current issue is still open for contributions, which are always welcome.

Secretary Susan Sunflower's Report:

The 2019 Annual Minutes were summarized and accepted by voice vote. There was no 2020 Annual Meeting, due to Covid. These 2021 Annual Minutes will be sent out for review and approval by the Board.

Nominations Committee Report, Susan Sunflower:

The Board had approved nomination of Joe Standaert as President and Cindy Carpenter as Vice President, for terms of two years each. The membership was invited to volunteer for the open Member-at Large Board position. Martha Rollefson accepted! The full slate was unanimously accepted by voice vote.

General Discussion: the open Program Scheduler position

Ken Borgfeldt initiated talk on this important topic. Botanical Walks and Talks are our basic activity, why we come together. Juanita Lambert has resigned, with many thanks, much appreciative applause. We need one or more people to step up.

The Schedule is established in 6-month segments, Jan - June, July - December, culminating with the Christmas Potluck. The Scheduler calls the twice-yearly meeting of all interested members. Those with ideas for winter talks follow-up with the possible speaker re date and topic. Walks are agreed upon at the meetings. The Scheduler and co-scheduler prepare the 6-month schedule for publication, which is sent to all members.

Juanita Lambert then thanked the membership for their support in scheduling walks and talks, especially Ken Borgfeldt and Penny Longhurst, for web support, procedures and problem solving. Members expressed great appreciation for her work these past several years.

Webmaster Penny Longhurst's Report for July 1, 2020 to June 30, 2021

Our website, <https://wcbotanicalclub.org/wcbotanicalclub.org>, was created in October 2015. There are currently 109 club members who receive email notifications about new posts. In addition to members, we have 68 followers or subscribers who are notified automatically whenever we post.

As of July 1, 2021, we've created 228 posts. In 2020 we had 131,163 views (when a visitor loads or reloads a page), and 14,580 visitors (when a user or browser goes to our site for the first-time during a given period [day, week, month, year]). During the first 6 months of 2021 we've had 75,344 views and 10,276 visitors. So, we are ahead of last year's numbers.

The post with the greatest number of views to date was the "Purchase Knob" field trip on 9/8/19, closely followed by one of our Virtual Field Trip posts, Ken's "Native Flora of Henderson County Walkways – June 21 – July 25, 2020".

Although we have not been able to do any formal field trips this year, we were able to post "Virtual Field Trips" almost every week, as well as continue through the winter with something new, "Virtual Indoor Meetings". Thanks to Alice & Charlie Brice, Jackie Burke, Ken Borgfeldt, David Heavner, Richard Holzman, Betty Jones, Jim Poling, Lucy Prim, Randy Richardson, Joe Standaert, and others who contributed trip reports or pictures to help us continue posting.

In addition to our weekly posts, the most popular pages are the Plant Keys, especially "Bryophytes" and "Violets", both created by Bonnie Arbuckle and Betty Jones. Our site generally appears on the first page for Google searches for NC native plants (try googling "NC moss"). The "Wildflower of the Week" page, written by Jim Poling, also gets a high number of hits.

Bonnie Arbuckle presented her special appreciation for Penny's work, especially this past year of Covid. She then led the membership in a big round of applause and cheers of appreciation.

Out-going President Gayle Mercurio then presented the tree-limb gavel to In-coming President Joe Standaert. Much applause! She repeated her thanks to Board and membership. More applause!

Jackie Burke announced the Vaughn Creek Greenway plant identification project, near Tryon. She would like volunteers. jackiecburke@gmail.com New President Joe Standaert then gave his first speech: Time for Lunch! And added his thanks to the Board, especially Ken Borgfeldt, Penny Longhurst and Juanita Lambert, for their great work in demanding roles, especially during Covid Year. He called for a motion to adjourn.

Motion to Adjourn by Charlie Brice, seconded by Penny Longhurst, at 12:15 p.m.

After lunch, a short walk in the woods was enjoyed in the rain by 7 members.

SHORTIA

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Editor: Ken Borgfeldt

2Q 2021

The mission of the Club is to identify and study native plants and their habitats and to advocate the protection of biodiversity in our natural world. Membership is open to all. Individual/family memberships are \$15. Send dues to Western Carolina Botanical Club, 351 Cheestoonaya Way, Brevard, NC 28712

SHORTIA

NEWSLETTER OF THE

WESTERN CAROLINA BOTANICAL CLUB



Shortia galacifolia

Oconee Bells

Fall 2021

Board of Directors

President	Joe Standaert
Vice-President	Cindy Carpenter
Secretary	Susan Sunflower
Treasurer	Penny Longhurst
Members at Large	Charlie Brice & Martha Rollefson

MEMBER NEWS

Field Trip Cancellations: Occasionally, field trips must be canceled or changed either for weather conditions or other reasons such as road closings. Such changes are sent out by email to all members by 7 AM the day of the field trip. If you do not have email access, please call the leader, co-leader, or recorder (whose phone numbers are listed on the schedule) to be sure that the walk is going to go as planned. Indoor programs are canceled when Henderson County Schools are closed (see <http://www.hendersoncountypublicschoolsnc.org>) but NOT necessarily canceled because of the delayed opening.

For any change of address, email or telephone number, please send an email to wcbotanicalclub@gmail.com.

Our webpage is located at <http://wcbotanicalclub.org>

Starting in July 2021 we will have a weekly walk scheduled through October, 2021. We will have a few COVID safety expectations for you to consider for participation on the walks.

- It is highly recommended that all who attend the walks be fully vaccinated
- Carpool drivers have full discretion over who may ride with them, in relation to vaccination status
- On the walks and gatherings, masks are optional, but social distancing is still recommended, especially if unvaccinated

IMPORTANT: Don't forget that dues (\$15) are due by the first of the year. Send dues to Western Carolina Botanical Club, 351 Cheestoonaya Way, Brevard, NC 28712

President's Message

Joe Standaert

It has been a great joy to be out in the woods again and to see all our favorite sites and our favorite plants. Of course, "botanizing" with old friends is great as well! As you know, we go to many of our sites every year and try to hit the top blooming times for our best plants. It is like old home week sometimes! However, there is a certain excitement to also visit some of these sites at a different time of year and be surprised to see new and different plants. We have done that several times like at Big Ridge, Ashmore and Glassy Mountain and it is always fun to see new and different specimens. I think Penny and Aleta are planning to visit Frying Pan monthly during 2022 as a project.

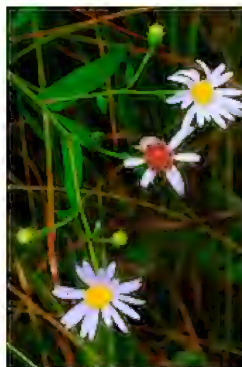
It has also always struck me that I sometimes find the best plants while I am sitting still, usually at my feet when sitting down for lunch. I guess it pays to take a lot of breaks and pay attention while you are eating your peanut butter and jelly.

We just did a special botany walk to the Buck Creek Serpentine Barrens with Maria Dunlavey of the U.S. Forest Service. The trip was inspired by our Randy Richardson putting me in contact with Gary Kauffman of the Forest Service for a guided trip. The club had not been there since 2006, I believe. It is a special place and a unique environment with a lot of unusual, rare and endemic plants. (See Penny's virtual post for [October 4th](#)).

The reason I mention the Barrens relates to a story about Alan S. Weakley and Thomas Govus who described and named a new species of Aster in the Barrens in 2004. The aster is now called *Symphyotrichum rhiannon*, Rhiannon's Aster or Buck Creek Aster. In a paper by Gary Kauffmann et al, describing the new species, Gary related that it was named in honor of Rhiannon Weakley, who was the toddler daughter of Alan and Allison Weakley. "Rhiannon hadn't had a nap that morning," says Alan Weakley, "and she had a little, ah, loss of composure." So, the group plopped down to give Rhiannon a snack and a chance to rest. And there, growing all around, was [Laura] Mansberg's mystery aster. So, the next time you plop down to rest and eat a sandwich, look around !

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Symphyotrichum Rhiannon
Rhiannon's Aster



What's in a Name – *Shortia*

by Penny Longhurst

Given the title of this publication, it's probably time to discuss the origins of its name. The genus name *Shortia* honors Dr. Charles W. Short, one of Kentucky's botanical pioneers, who never saw the plant!

Charles Short was born near Lexington, Kentucky in 1794. His father, Peyton, was a landowner and businessman. Apparently the “early part of Dr. Short's life was marked by no event of particular importance other than exemplary conduct and love of nature” (Gross, 1865)! Short attended Transylvania University in Lexington and then served a 2-year apprenticeship with his uncle, a local physician, before moving to Philadelphia in 1813 to attend the medical school of the University of Pennsylvania. His uncle William, a wealthy retired diplomat, lived in Philadelphia. In addition to his medical studies, Short attended lectures by Benjamin Smith Barton, the professor of botany who had mentored Thomas Nuttall and paid for his collecting expeditions. Barton's classes included many explorations along the banks of the Schuylkill River. Short's interest in botany was evident when he wrote his M.D. thesis on the medicinal virtues of *Juniperus sabina*.

Shortly after his graduation in 1815, Short married his stepsister, Mary Churchill. They moved to Kentucky in 1816, first settling in the Lexington area and later near Nashville, where Short worked as a country doctor. The local fauna was relatively undiscovered and Short collected plants while out visiting patients and sent them to Barton in Philadelphia, as well as to other botanists. He met Thomas Nuttall who accompanied him on botanical trips when he was travelling through the area and continued to correspond with him. In his genera, Nuttall acknowledged Short for sending him a drawing of a specimen of *Erigenia bulbosa* (Harbinger of Spring) which was found on the banks of a Kentucky River, and Short started to develop a reputation as an authority on Western plants, particularly those of Kentucky.

Several times after his return to Kentucky, Short was offered the position of chair of materia medica (the discipline that studied the therapeutic properties of plants) and medical botany in the medical school at Transylvania University. However, he declined the offers; he felt too inexperienced, and at that time the newly formed medical school was in disarray. However, by 1825 the medical department at Transylvania University had become the second largest in the nation after Harvard Medical School. This time when he was offered the position, Short accepted. His job required him to give lectures six days a week. When not teaching he continued collecting plants. The only botanical textbooks available at that time were the *Flora* written by Michaux and Pursh which failed to include many of the local plants found in Kentucky. At the end of 1827 the Medical Department started publication of the “Transylvania Journal of Medicine and the Associated Sciences”, edited by Short and a fellow professor. Short contributed articles on Kentucky Flora, providing much needed information on the local plants. He planned to eventually write a “Flora of Kentucky”, but it never materialized. However, as the recognized authority on Western plants, he now started corresponding with and sending plant specimens to noted botanists, including John Torrey and Asa Gray, who were eager to receive new plants from the west.

In 1838 Short took the position of chair of materia medica, and later Dean, in the newly opened Louisville Medical Institute. In 1846 the Institute became the Medical Department of the University of Louisville. The same year Short received an inheritance from his uncle William and purchased an estate about 5 miles east of Louisville. The Short family operated a dairy and market garden and he set up a laboratory for preparation of herbarium specimens collected in his new hunting grounds. Short did not enjoy teaching, found that his faculty duties reduced the amount of time he could spend on botanical pursuits and, suffering from failing health, retired in 1849. After his retirement he spent much of his time preserving his large collection of plants and flowers, reading botanical literature, corresponding with other botanists, and adding to his herbarium. Using his

inheritance, he supported botanical expeditions throughout the world, receiving specimens in return. Short died on March 7, 1863, of pneumonia associated with typhoid fever. His herbarium containing approximately 16,000 specimens was donated to the Academy of Natural Sciences in Philadelphia. Short's papers are located at the Filson Club in Louisville, the Library of Congress, and the College of William and Mary in Williamsburg.

In March 1839 Asa Gray, who was on a year's leave of absence from the University of Michigan to obtain books for its new library and examine American plants in European herbaria, arrived in Paris and visited André Michaux's herbarium. Gray recognized that an unidentified specimen, labeled "*Hautes montagnes de Caroline. An pyrola spec? An genus novum?*" [High mountains of Carolina, A pyrola species? A new genus?], was a new plant and named it *Shortia galacifolia* in honor of his friend Charles Short. *Galacifolia* means having "leaves resembling Galax", a common mistake for many when first seeing the plant. Gray travelled to the high mountains (Roan and Grandfather) of North Carolina in 1841 and 1843 looking for *Shortia* but was unable to find it, like many other botanists who searched high and low (Gray, 1841). Then, in 1877, 17-year-old George Hyams discovered a colony of *Shortia* growing along the Catawba River, near Marion, North Carolina. In June 1879 Gray finally got to see the plants when he, his family, and some botanical friends travelled by train to the terminus of the Western Railroad of North Carolina at Henry's Station near Old Fort (the 1,832-foot-long tunnel connecting the railroad to Asheville was not opened to rail traffic until October 1880). The group then travelled with George Hyams to see the *Shortia* patch (Redfield, 1879).

Gray, however, believed that the plant Michaux had collected came from a different location and the search continued. In 1886, Charles Sprague Sargent, a member of the 1879 expedition and Director of the Arnold Arboretum in Boston, returned to the Carolinas, but this time explored the Blue Ridge escarpment between Sapphire and Highlands. He and his companions were successful, finding *Shortia* growing along Bear Camp Creek, which in those days flowed into the Horsepasture River and subsequently the Keowee River. In other words, at the head of the "Kiwi", as described by Michaux in his directions for finding the "*new shrub with scalloped leaves*" (Wilker, 2017). This area is now under Lake Jocassee. Frank Boynton, who lived in Highlands and had been with Sargent when the *Shortia* plants were discovered, subsequently explored further. From Highlands he went to Whitewater Falls but found no *Shortia* until he descended the Whitewater River to around the 1,200 feet elevation level. There he reported it "*grows by the acre. Every little brooklet is lined with it. All of these steep banks are literally lined with Shortia. What is comforting to the botanist is, that it can hardly be exterminated*" (Boynton, 1889). Much of this area is now protected within Gorges State Park and Nantahala National Forest. I can report from personal experience that *Shortia* still exists by the acre along some of the more remote creeks in that area. Fortunately, it can also be seen without much difficulty in many places visited on our field trips.



Asa Gray wrote an obituary of Charles Short in 1863. In closing he wrote "*Two or three species of Kentucky plants commemorate the name of Dr. Short as their discoverer. Also a new genus, Shortia, inhabiting the Allegheny Mountains, was dedicated to him by the present writer. But, alas! too like the botanist for whom it was named it is so retiring in its habits that it is not known as it ought to be, but lives as yet unseen, except for a single botanist of a former generation, in some secluded recess of the Black Mountain of North Carolina. It will some day be found again and appreciated*". Indeed, it was and is.

Many plants originally named in Short's honor have been renamed. Weakley lists seven plants credited to Short, but only two are found in our database: Short's Hedge Hyssop (*Gratiola viscidula*), formerly *Gratiola viscidula* ssp. *Shortii*, and Southern Shortia, Oconee Bells (*Shortia galacifolia*), the species found in Transylvania and Jackson counties, NC, Oconee and Pickens counties, SC, and Rabun County, GA. Although relatively local, Northern Shortia (*Shortia brevistyla*), the species that George Hyams discovered in McDowell County, grows in a part of the state that the club doesn't normally visit.

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Asters with Heart-Shaped Petioled Leaves

by Lucy Prim

This September, Penny, Charlie and I did a scout for our walk in Sam Knob Meadow. What a botanical challenge this walk is! The myriad yellows and lavenders spread out in the meadow is a delight to see, but identifying the twelve Goldenrods and eleven Asters on our list is more confusing than delightful. My well-intentioned efforts to study keys and features meets with defeat year after year. The heart sinking feeling descends on me as soon as I get out of the car and see all the Asters clustering around the parking lot! The little path leading to the meadow raises my spirits a wee bit. Perhaps a bit of identifying is possible here. But then we turn the corner and spread out before us is the meadow, the acre upon acre of lavender and yellow and the tiny path winding its way down the hill, right through the thick of it. Then the sinking feeling takes hold and I am gripped by the temptation to forgo all efforts at botanical identification and float along in a blissful beauty induced stupor. But if you're recorder, you are not supposed to do that!

This year, after a lively email back and forth with Penny discussing which Aster we were looking at in one of our photos, I decided to carve out a tiny piece of territory in the confusing Aster world, to have at least one area to feel confident about. Did my attempt work? No, it didn't! At least, it didn't altogether work, but it did help. This is what I learned—

There are four "cordate and petioled" Asters that we are most likely to see here in our mountains. The best way to identify them is to look at the leaves. On any individual plant, there are very different sorts of leaves. We cannot expect all the leaves on a plant to match the descriptions in a book. They do not! Concentrate on the petioles, and take descriptions as a vague suggestion, not a rule. Aster leaves don't follow the rules, but they have a vague leaning in that direction.

The tiny blazes on the phyllaries may be a good clue. The tiny dark tips on *Symphyotrichum cordifolium* makes this species easier to be sure about.

Features such as toothed or entire leaves, wavy margins, height of plants and hairy stems are less reliable as clues. I have many *S. cordifolium* growing here at my house, most of them over 5 feet tall, one of them 7 feet tall! But the website "Vascular Plants of North Carolina" says they are typically 1 to 2 1/2 feet tall. The stems are hairy, but the hairs are so tiny I can't feel them at all, and can only see them with my stereoscope. Is the common name "Wavy Leaf Aster" a good way to look for this one? No, it isn't! There are many *S. undulatum* growing nearby and they have more leaves without wavy margins than with.

Narrowing the field of possibilities certainly was a good step to take. But my tiny step won't get me very far. When next fall comes around, I'm sure that particular sinking feeling brought on by Sam Knob Meadow will descend once again. There are still nine Asters left on our list! Four of them start with the letter "P". Maybe they will be my project for next fall!

Symphotrichum

with heart-shaped petioled leaves

cordifolium

S. laevicaule is similar except it has glaucous leaves.



Heartleaf Aster

urophyllum



Arrowleaf Aster

undulatum



Wavy Leaf Aster

2009 Prim. Sept 2005



S. undulatum - Phyllaries with Diamond Blaze



S. undulatum - Leaf with Dilated Cordate Clasping Base



S. cordifolium - Phyllaries with Dark Purple Tip



S. cordifolium - Long Claspig Petiole

Plants We Love to Hate – Nettles

by Penny Longhurst

Let's face it – everyone hates nettles! The stinging kind, that is. “Nettle”, meaning to “irritate or provoke”, has been used to describe many plants (and people) that may prickle or sting or have leaves resembling true nettles. Our database contains 14 plants that include the word “Nettle” in their common name. However, the only ones we commonly see are False Nettle (*Boehmeria cylindrica*), Wood Nettle (*Laportea canadensis*), Horse Nettle (*Solanum carolinense*), Broadtooth Hedge Nettle (*Stachys latidens*), and the non-native Purple Dead Nettle (*Lamium purpureum*). Fortunately, both American (*Urtica dioica* ssp. *gracilis*) and European Stinging Nettles (*Urtica dioica* ssp. *dioica*) are rare in this area!

False Nettle (*Boehmeria cylindrica*) and Wood Nettle (*Laportea canadensis*) are both members of the *Urticaceae* (Nettle) family. The genus *Boehmeria* is named after the German botanist, Georg Rudolf Boehmer. *Boehmeria cylindrica* is commonly found in wet areas. However, the plants shown below were seen on Coontree Loop and at Ashmore Preserve, not particularly wet spots. A smaller plant than *Laportea canadensis*, it has opposite leaves with long petioles and lacks stinging hairs. Its small greenish flowers are arranged in clusters along leafless spikes that originate in the leaf axils. The specific epithet *cylindrica* probably refers to the cylindrical shape of the flower clusters.



False Nettle (*Boehmeria cylindrica*)
Photograph by Joe Standaert



False Nettle (*Boehmeria cylindrica*) Fruit

The genus *Laportea* is thought to be named after an unknown person named Laporte, who accompanied the French botanist Charles Gaudichaud-Beaupré on the exploratory circumnavigational voyage (almost – it was wrecked off the Falkland Islands in 1820) of the corvette L'Uranie. *Laportea canadensis*, unfortunately a dominant plant in many wet places in the summer, has large alternate leaves. Both the stems and leaves have stinging hairs that contain formic acid. Contact with your skin will cause a stinging pain. However, compared to the agony caused by encounters with true stinging nettles, *Laportea* stings are quite minor. Furthermore, the distinctive flowers of *Laportea* look quite different from those of *Boehmeria*, so the need to get up close and personal is usually unnecessary! The large creamy-colored bundles of male flowers of *Laportea* are found in

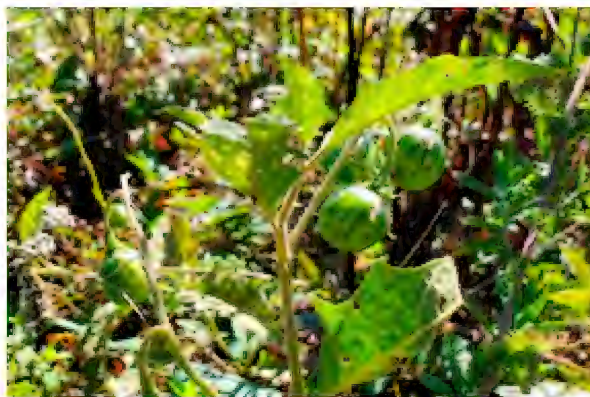
lower leaf axils, while the female flowers are located at the uppermost axils.



Wood Nettle (*Laportea canadensis*) Male Flowers Wood Nettle (*Laportea canadensis*) Female Flowers

Horse Nettle (*Solanum carolinense*), a member of the *Solanaceae* (Nightshade) family, is commonly found growing on the edges of grassy or waste areas. The genus name *Solanum* is derived from the Latin for “quieting”, referring to the narcotic properties of plants in the Nightshade family.

Its growth habit is generally sprawling. Its attractive star-shaped petals are usually white, but sometimes blueish, with long yellow anthers. The stems and veins on the underside of the leaves are covered with prickles. I checked them out this afternoon, and in my opinion those nasty things should be called THORNS! Its poisonous fruits look like greenish tomatoes and turn orange as they age.



Stachys species bear the common name “Hedge Nettle”. This was probably derived from their habit of growing in hedgerows in England and having leaves that resemble nettles. *Stachys* are members of the *Lamiaceae* (Mint) family. Broadtooth Hedge Nettle (*Stachys latidens*) is the most common *Stachys* species that we see on our walks along the Parkway. The genus name *Stachys* is derived from the habit of its flowers to grow in spikes; *latidens* means having “wide teeth”.



Stachys latidens is an erect, unbranched plant with square stems. The stem edges (corners) are covered with downward-facing hairs, as shown above. The attractive pink and white flowers appear in whorls on terminal spikes. The lower lip droops down and is streaked with purple. The pointed calyx tubes are covered with fine hairs.

The genus name *Lamium* is derived from the Greek for “dead nettle”. Dead Nettle leaves resemble those of true nettles, but they lack the ability to sting. All dead nettles are non-native to the United States and considered invasive weeds that occur in most open habitats. Like *Stachys*, *Lamium* are members of the *Lamiaceae* (Mint) family.

Purple Dead Nettle (*Lamium purpureum*) can often be confused with the similar looking Henbit (*Lamium amplexicaule*). However, I discovered that it is fairly easy to distinguish them from each other.



Purple Dead Nettle (*Lamium purpureum*)



Henbit (*Lamium amplexicaule*)

The leaves of *Lamium purpureum* are petioled, hairy, and heart-shaped. Often the upper leaves are purple, crowded around the flowers, and droop downwards as seen in the photograph. In contrast, the leaves of *L. amplexicaule* are green, sessile, hairless, almost round with scalloped margins, and extend out horizontally. *Amplexicaulis* means clasping the stem, describing the sessile features of Henbit leaves. The flowers of *L. purpureum* are found in whorls originating from the upper leaf axils. The flowers of *L. amplexicaule* are more erect than those of *L. purpureum*, with a much longer tube, and a spotted lower lip.

So, I guess we should count our blessings that our nettles are mostly benign plants. However, I wouldn't want to fall into a patch of thorny Horse Nettles!

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SHORTIA

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The mission of the Club is to identify and study native plants and their habitats and to advocate the protection of biodiversity in our natural world. Membership is open to all. Individual/family memberships are \$15. Send dues to Western Carolina Botanical Club, 351 Cheestoonaya Way, Brevard, NC 28712

SHORTIA

NEWSLETTER OF THE

WESTERN CAROLINA BOTANICAL CLUB



Shortia galacifolia

Oconee Bells

Winter 2021

Board of Directors

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Secretary	Susan Sunflower
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MEMBER NEWS

Field Trip Cancellations: Occasionally, field trips must be canceled or changed either for weather conditions or other reasons such as road closings. Such changes are sent out by email to all members by 7 AM the day of the field trip. If you do not have email access, please call the leader, co-leader, or recorder (whose phone numbers are listed on the schedule) to be sure that the walk is going to go as planned. Indoor programs are canceled when Henderson County Schools are closed (see <http://www.hendersoncountypublicschoolsnc.org>) but NOT necessarily canceled because of the delayed opening.

For any change of address, email or telephone number, please send an email to wcbotanicalclub@gmail.com.

Our webpage is located at <http://wcbotanicalclub.org>

A 2022 schedule will be released early in 2022. We will have a few COVID safety expectations for you to consider for participation on the walks.

- It is highly recommended that all who attend the walks be fully vaccinated
- Carpool drivers have full discretion over who may ride with them, in relation to vaccination status
- On the walks and gatherings, masks are optional, but social distancing is still recommended, especially if unvaccinated

IMPORTANT: Don't forget that dues (\$15) were due by the first of the year. Send dues to Western Carolina Botanical Club, 351 Cheestoonaya Way, Brevard, NC 28712

President's Message

Joe Standaert

“My mama always said, life was like a box of chocolates. You never know what you’re gonna get.” (Tom Hanks, in *Forrest Gump*, 1994)

This one of the famous lines from that classic movie and pretty much sums up our human experience. This can apply equally to finding a brand-new flower species on a favorite and well-worn trail to surprises in everyday personal experiences. This is what makes life interesting. Over the past 2 years, with COVID coming and going (and coming again!) we have certainly had difficulty carrying on as “normal”. As you know, the club initially suspended outdoor events and all the indoor events in light of COVID but then re-instituted the outdoor walks as vaccines and social distancing became the norm. We were hopeful to re-start the indoor meetings in early 2022, but no such luck! As a comical caption found on the internet summed it up: **“Life is like a box of chocolates...but (2021/2022) is nothing but nuts”!!**

Thanks to Penny for a lot of hard work, we are re-starting the Spring / Summer outdoor walks again by modelling after an old schedule and reconfirming leaders. Until the regular outdoor season starts, we will try to add a couple “special” events, like a pontoon boat ride on Lake Jocassee to see the Oconee Bells and possibly a winter tree ID walk.

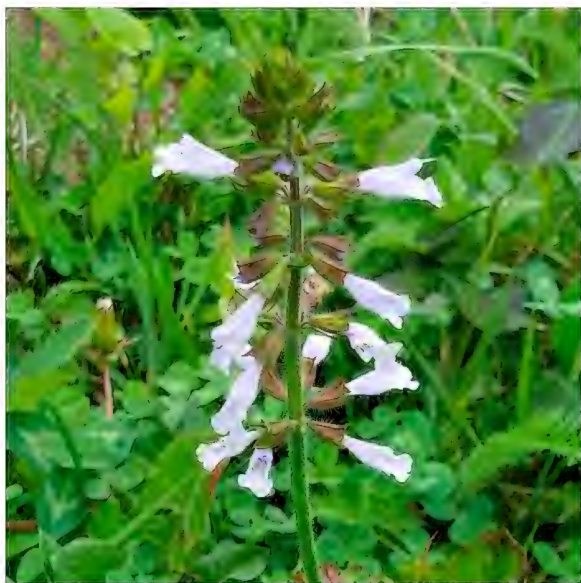
Now, speaking of a box of chocolates... I will be stepping down from the President's role by the end of June, if not sooner. Our Vice-President, Cindy Carpenter will step up as of July 1st, with term to be determined. I had been clean from my 2018 battle with esophageal cancer for over 3 years. Now, with what I thought was a hip problem, turns out to be a metastasized return of my original cancer. At the moment, I have done some radiation treatments and I will be starting a 5-month schedule of bi-weekly chemo sessions. Obviously, I will not be doing much hiking.

In the same vein (no pun), the Club needs to fill some Board positions. If you are interested or would like to nominate someone for one of these spots, please contact Gayle Mercurio (gaylemercurio@yahoo.com), who is head of the nominating committee. The positions available are: Secretary, as Susan Sunflower has also stepped down due to health concerns, Vice-President to replace Cindy, and Scheduler(s) to replace Juanita. Also, Penny is currently serving as Treasurer, but only because volunteered when that job needed to be filled.

Plants We Love to Hate! *Salvia lyrata*

by Penny Longhurst

Salvia lyrata is an attractive plant. Its basal leaves provide a good ground cover and its blue flowers, blooming early in the spring, are a joy to both bees and humans. We frequently see it growing in the grass alongside the Blue Ridge Parkway. One year, during a club workday at Bullington Gardens Juanita asked us to weed the plants from the paths. I asked if I could take my gleanings home. She warned me that it spreads like crazy. She is always right! It has survived hordes of squirrels and chipmunks grubbing around for bird seed. It is an indestructible plant!



Salvia or Sages are members of the *Lamiaceae* or Mint family and have square stems. Weakley includes 12 *Salvia* species in the Flora of the Southeastern United States. Only two, *Salvia lyrata* (Lyre-leaved Sage, Wild Sage, Cancerweed) and *Salvia urticifolia* (Nettle-leaved Sage), are listed in our database but the club has never identified *S. urticifolia* on our field trips. The remaining *Salvia* species are plants of the Piedmont or Coastal Plain.

The genus name, *Salvia*, is derived from the Latin word *salvere*, meaning “to heal” and *Salvia* species traditionally have been used in folk medicine. In addition to its purported medicinal properties, *S. officinalis* (commonly known as Sage), a native of the Mediterranean and northern Africa, is used for culinary flavorings. Cancerweed, one of the common names for *S. lyrata*, reflects its use in treating cancer. The specific epithet, *lyrata*, is derived from the shape of the leaf lobes resembling a lyre. *Urticifolia* refers to the leaves resembling those of nettles.

Salvia lyrata was named in Linnaeus’ *Species Plantarum* and described as originating in Virginia. The plant was first mentioned in Clayton and Gronovius’ *Flora Virginica*, published in 1739 and credited to John Clayton.

Salvia urticifolia was also named by Linnaeus and published in *Flora Virginica*. The Flora of the Southeast maps show that it has been seen in some counties near here. Janie Marlow’s pictures at NameThatPlant.net are all taken in April in Oconee County, SC, so next spring when we venture south we need to search it out. *Salvia urticifolia* differs from *S. lyrata* by having no basal leaves. It has several pairs of leaves along the stem producing a whorled appearance, while *S. lyrata* usually has only one or two pairs. The flowers also seem to be quite different. Based on photographs, *S. lyrata* blooms are a lighter blue than those of *S. urticifolia*. In addition, the corolla tube appears to be much longer in *S. lyrata*. These differences can be nicely seen in the pictures on the uswildflowers.com website.

Acknowledgements: Thanks to Ken Borgfeldt, our Master Recorder, for providing the data on plant sightings.

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uswildflowers.com *Salvia lyrata*

<https://uswildflowers.com/detail.php?SName=Salvia%20lyrata>

uswildflowers.com *Salvia urticifolia*

<https://uswildflowers.com/detail.php?SName=Salvia%20urticifolia>

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What's in a Name – Claytoniana

By Penny Longhurst

One of the more interesting ferns that we see growing in this area is the Interrupted Fern (*Osmunda claytoniana*). A member of the *Osmundaceae* or Royal Fern family, it's principally a fern of the northern states and upland forests. *Osmunda claytoniana* differs from the other members of its family, *Osmundastrum cinnamomeum* and *Osmunda regalis*, by having its fertile pinnae located in the middle of the leaf blade (interrupting the sterile pinnae), rather than on a separate frond or at the tip of the blade. Confusingly, these interrupting pinnae may not be present every year. The genera *Osmundastrum* and *Osmunda* are derived from *Osmunder*, the Saxon name for the god Thor. The specific epithet, *Claytoniana*, is named after John Clayton, one of the earliest American botanists, who specialized in the plants of Virginia.



Interrupted Fern (*Osmunda claytoniana*)

John Clayton was an Englishman, born into a wealthy family in 1694, and probably raised in the western suburbs of London. His father practiced law in London before moving to Williamsburg, Virginia around 1705 as secretary to the lieutenant-governor. He was then Attorney General of Virginia from 1713-1737. John Clayton probably joined his father in Virginia in 1715. He worked as Clerk of Gloucester County, across the York River from Williamsburg, for 53 years during which time he wandered around the region collecting plants. In 1723 he married Elizabeth Whiting, a member of a family with close ties to George Washington. They had eight children. The family lived on a 450-acre plantation near Gloucester Courthouse where he grew tobacco as well as most of the food needed to support those living on his property. Thomas Jefferson in his "Notes on the State of Virginia" described Clayton as "an accurate observer ... who passed a long life exploring and describing its plants, and is supposed to have enlarged the botanical catalogue as much as almost any man who has lived".

Prior to Clayton's arrival in Virginia, Mark Catesby and others had been collecting flora and fauna to send to enthusiasts in England. Catesby had moved to Williamsburg with his sister Elizabeth to join her husband Dr. William Cocke in 1712 and would have known his neighbor, Clayton's father. Catesby remained in Virginia until 1719, when he returned to England. It is probable that during his time in Virginia he met John Clayton. They certainly corresponded and Clayton sent Catesby many plants to identify after his return to England. The *Hamamelis* (p. 102), *Stewartia* (p. 113), and *Magnolia acuminata* (p. 115) described in the Appendix of Catesby's book "The Natural History of Carolina, Florida and the Bahama Islands" are credited to Clayton. Clayton also provided the description for the Eastern Whip-poor-will bird (p. 116). In gratitude for his help, Catesby sent Clayton a signed copy for his library. Clayton's extensive library also included Linnaeus' "Hortus Cliffortianus" and "Species Plantarum", as well as many other important botanical texts.

Through correspondence, Catesby introduced Clayton to many prominent European botanists, and dried plants and seeds collected by Clayton were forwarded to them by Catesby. The most important of these were Linnaeus and his friend, the Dutch botanist, Johannes Fredericus Gronovius, who received large numbers of Clayton's plants. Clayton created a "Catalogue of Herbs, Fruits, and Trees Native to Virginia", identifying the plants and writing descriptions, and sent it to Gronovius for his library. Unknown to Clayton and without his permission, Gronovius translated it into Latin and published Part I of "Flora Virginica" in 1739 with Clayton listed as co-author. Unfortunately, the book became generally known as "Gronovius' Flora", although Clayton did most of the work.

Linnaeus saw many of Clayton's herbarium specimens in Holland when he worked with Gronovius in Leiden, and others were forwarded to him after he returned to Sweden. He also received seeds which he planted in George Clifford's garden and included in "Hortus Cliffortianus". Linnaeus's "Species Plantarum" lists 202 plants with "habitat in Virginia". Fifty-seven of those plants were previously published in Gronovius' "Flora Virginica" and probably collected by Clayton. In gratitude for his contributions Linnaeus named the genus *Claytonia* after the "English Virginia merchant, John Clayton". Clayton himself named the genus *Agastache* (Giant Hyssop), the name being derived from the Greek for "very much" and like "ears of grain", describing the flower spikes of the plants.



Purple Giant Hyssop (*Agastache scrophulariifolia*)

In fall 1738 John Bartram made his first visit to Virginia but was disappointed to have missed meeting Clayton who had gone west looking for land to buy. Nonetheless, Bartram and Clayton later became great friends and corresponded and exchanged specimens for years although they probably didn't finally meet until 1760.

Mark Catesby died in 1749. He had been instrumental in forwarding Clayton's seeds and plants to Gronovius and other European botanists. After his death Clayton's friend Peter Collinson took on that task. Collinson was an English merchant with a passion for gardening and botany. He was friends with prominent European and American scientists, including Benjamin Franklin and Linnaeus, and was a member of the Royal Society. Through his shipping contacts Collinson was able to import exotic plants from North America to Europe, especially those provided by John Bartram. The association with Collinson was highly beneficial to Clayton. Collinson read manuscripts prepared by Clayton at the Royal Society, increasing his reputation, and received and forwarded his plants to interested botanists. In 1737 Linnaeus named a plant sent to him by Collinson in his honor. We are all familiar with Horse Balm (*Collinsonia canadensis*).

In his later years Clayton wrote a new flora of Virginia, "Flora Virginiana Claytonii" arranged by the sexual classification system described in Linnaeus' "Systema Naturae". In 1758 he sent it to Collinson who planned to have it illustrated and published in London. However, this never happened, probably because of delays with the illustrations and the publication of Gronovius' new edition of "Flora Virginica" in 1762. Clayton died in January 1774, leaving two volumes of manuscripts, apparently the only remaining copies of his own flora. At the onset of the revolutionary war the manuscripts were stored with the records of New Kent County for safety.

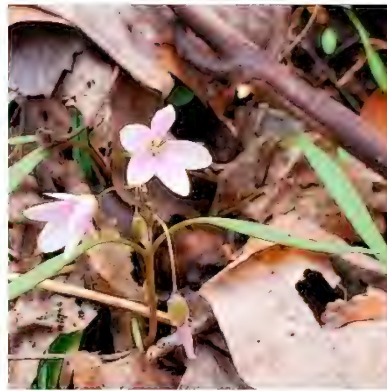
Sadly, the county records and the manuscripts were destroyed in a fire in July 1787. All that remains are some notes taken by John Ellis, a naturalist and member of the Royal Society, who had been asked by Collinson to review the manuscript. Ellis's notebook is in the Archives at the Linnaean Society of London and reproduced in the Appendix of the Berkley's book.

Approximately 700 of Clayton's specimens from the Gronovius herbarium are in the John Clayton herbarium at the Natural History Museum in London. Digital images of the specimens can be seen on the collection's website*. More of Clayton's plants are in the herbarium at Oxford University. Most of the plants in Linnaeus' herbarium that are labeled as originating in Virginia probably also came from Clayton.

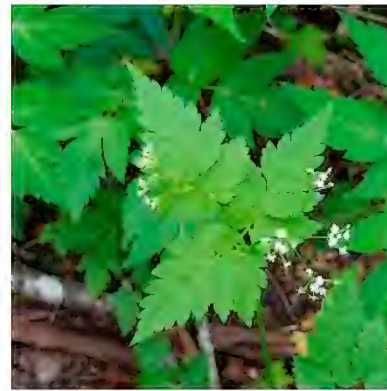
Weakley lists the following plants which bear Clayton's name: Carolina Spring Beauty (*Claytonia caroliniana*) and Spring Beauty (*Claytonia virginica*), Clayton's Bedstraw (*Galium tinctorium*, formerly *Galium claytonii*), Sweet Cicely (*Osmorhiza claytonii*), and Interrupted Fern (*Osmunda claytoniana*). Most of these we see quite often, except for *Galium tinctorium* which we last found in 2005 at Kanuga Conference Center. *Claytonia virginica* differs from *C. caroliniana*) by having longer, thinner leaves.



Carolina Spring Beauty
(*Claytonia caroliniana*)



Spring Beauty
(*Claytonia virginica*)



Sweet Cicely
(*Osmorhiza claytonii*)

In addition, four members of the genus *Agastache* are found in the Southeastern United States: Lavender Giant Hyssop (*Agastache foeniculum*), a native of the upper Midwest and Great Plains, and the non-native Korean Mint (*A. rugosa*) are not in our database and unlikely to be found in the areas we visit. We quite often see Purple Giant Hyssop (*A. scrophulariifolia*), a hairy plant with flowers that have a purplish tinge. There is a large patch growing along the Blue Ridge Parkway near the gate at the beginning of the Frying Pan Gap trailhead. Although it's in our database, the club has never recorded seeing Yellow Giant Hyssop (*A. nepetoides*) which is a smooth plant with yellow flowers.

Acknowledgements: Thanks to Ken Borgfeldt, our Master Recorder, for providing the data on plant sightings.

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How Did Witch-Hazel Get Its Name?

by Lucy Prim

Years ago, Dana Herman brought a Witch-Hazel to the club and asked if any of us wanted it. I ended up being the lucky recipient, and I brought it home and planted it on the slope outside my front door. It was an unpropitious looking little twig when I first planted it, but over the years it has grown up and is now several feet over my head. It didn't bloom much at first, but now the little yellow flowers are numerous enough to catch my eye on a cold wintery morning when all the nearby bushes have lost their leaves.

When trying to decide what to write about for this Shortia article, I thought maybe this plant would be an interesting subject. Unlike some other plants I've delved into, this one presented no problems with identification. There are only 5-6 species of *Hamamelis* worldwide according to Weakley's Flora and only one of them, *Hamamelis virginiana*, grows here in our mountains. Two others, *H. ovalis* and *H. Virginiana* grow in North America and the other two grow in East Asia. Although identification issues aren't a concern with this plant, there is a mystery about how it got its name and that is what this article is about. The reason for "Hazel" isn't as mysterious as the reason for "Witch." When reading here and there on the internet and in my books, I found all sorts of possibilities and I have no idea which is correct. Maybe all of them could play a role—who knows!

The first part of the name "Hazel", it has been reasoned, may come from the similarity of the leaves to those of our native hazels, *Corylus*. Another reason may be that our native *Hamamelis* reminded the early European settlers of plants they'd known in England, maybe Elms and Hornbeams, which went by names such as "Wyche Hasill", "Wych Hazel," and "Witch Hasell". (I found these spellings in the OED.)

But what about the name "Witch"? Where did it come from? There are various explanations for this. Here are four possibilities:

1. Weakley's Flora says "witch" refers to the "perversity" of the plant for blooming in the fall. I thought this was the funniest reason.
2. Timothy Spira says the name "witch" comes from a pointy tipped gall which grows on the leaves. This gall does indeed have a shape exactly like a witch's hat!
3. Various sources say the name "witch" comes from the plant's perceived usefulness in the practice of dowsing—"water witching." Yes, this is definitely a likely possibility...
4. The earliest reference to the name that I found in the OED is back in 1541 with this spelling: "Wyche hasill." In his book, "A Natural History of Trees in Eastern and Central North America," Donald Peattie writes, "Philologists like to dispute the source of the name, saying that it comes from the word Wyche which has nothing to do with witches, but is related, according to various and sundry authorities, to Anglo Saxon "wicken" meaning to bend, or Old English "wick," meaning quick or living, or possibly even to the modern word, switch."

Whatever the reason for its name, it certainly is interesting that there are so many explanations! Each one seems logical enough to be the right one. But I suppose we won't know for sure, and that is no doubt just what you would expect. After all, this is a plant which plays a part in various sketchy schemes of human devising, and if that isn't enough—it has a very perverse propensity for blooming in the fall!



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